

REMARKS

Claims 7-12 are pending in the application prior to entering this amendment. The examiner rejects claims 7-12 under 35 U.S.C 102(b) as being anticipated by Loeb et al. (U.S. Patent 5,571,148).

The applicant cancels claims 1-6, amend claim 1, and add new claims 13-14.

Claims 7-14 remain in the case after entering this amendment.

The applicant adds no new matter and requests reconsideration.

Interview Summary

The applicant, together with the undersigned, interviewed examiner Ni on January 19th of this year. The applicant and undersigned discussed the tortured prosecution history of the present application including that the currently cited reference, Loeb, was overcome during earlier responses, including appeal, before a different examiner. Examiner Ni agreed that Loeb does not render old the present invention for the reasons expressed ad nauseam in the prosecution history. Examiner Ni agreed to remove the rejection of claims 1-7 as old over Loeb.

The applicants request the examiner remove the finality of this action given the circumstances of the application's prosecution history.

Claim Rejections under 35 USC § 102

During a subsequent phone call, examiner Ni rejected claims 1-7 under 35 U.S.C. § 102(e) as being anticipated by Lippa et al. (U.S. Pat. No. 6,377,693). The applicant traverses the rejection for the reasons that follow.

Lippa discloses a method and apparatus for the treatment of tinnitus involving generating a noise signal to mask the ringing or buzzing in the ears caused by tinnitus and transposing the noise signal into the ultrasonic range. Lippa's masking signal, when applied vibrationally or sonically, "effectively masks the tinnitus noise without interfering with the subject's perception of normal sounds such as human speech." Abstract.

Lippa discloses two alternative embodiments respectively at figures 1 and 2. In figure 1, Lippa discloses generating a noise signal with signal generator 10, ultrasonically modulating the noise signal with ultrasonic modulator 12, amplifying the modulated signal with amplifier 14, and applying the modulated signal with application 16 to the body 18. Notably, the applicator 16 "may be an electrode which directly applies an electromagnetic

signal to a selected portion of the body.” Column 2, lines 33-35. The signals from generator 10 are designed to mask tinnitus buzzing while not being perceived by the user. Column 2, lines 8-10. Thus, while Lippa discloses that it ultrasonically modulates its noise signal, this noise signal even when directly applied to a “selected portion of the body” does not cause a percept. That is, Lippa’s system is designed “to be effective in masking the ringing or buzzing in the ears associated with tinnitus, while not interfering with the perception of speech or other normal sounds.” Column 2, lines 37-40.

In the alternative embodiment shown in figure 2, Lippa describes picking up sound with microphone 22, ultrasonically modulating the sound with ultrasonic modulator 12, amplifying the modulated signal with amplifier 14a, and applying the modulated signal with application 16a to the body 18. A noise signal generator 10 generates a noise signal, again selected for minimum perception (column 2, lines 53-55), an amplifier 14b amplifies the noise signal, and a sonic or vibratory applicator 16b (headphones or vibrational transducer) apply the amplified noise signal to the body 18. Since an ultrasonic signal is resistant to masking by stimuli in the auditory range of the noise signal, the embodiment of figure 2 is effective in treating tinnitus. “Speech is transposed to the auditory frequency range by ultrasonic modulator 12 and *applied to the body vibrationally* via amplifier 14a.” The alternative embodiment of figure 2, therefore, only discloses the application of ultrasonically modulated sound to the body vibrationally to create a percept. “As taught by the Lenhardt et al. patent, sound in the normal auditory frequency range can be perceived by the brain when it is transposed to the ultrasonic range and applied *vibrationally* to the body, such as by bone conduction, for example.” Column 2, lines 47-51.

Claim 7 recites *that the modulated signal is electrically directly applied to the cochlea to cause a percept*. Lippa makes no such disclosure. Lippa never once discusses the application of an ultrasonically modulated signal *directly to the cochlea*, nor does Lippa state nor infer that the electrical signal is audible. Even if examiner Ni considers Lippa’s disclosure of an applicator 16 that “directly applies an electromagnetic signal to a selected portion of the body” as disclosing the direct application of the ultrasonically modulated signal to the cochlea, such a direct signal application is specifically to avoid the noise signal from “interfering with the perception of speech or other normal sounds.” Where Lippa discloses application of an ultrasonically modulated sound by applicator 16b in figure 2, such an application is not directly to the cochlea as recited, but rather vibrationally, through bone conduction, as was well known to those in the art.

If anything, Lipa clearly demonstrates the non-obvious nature of the presently recited invention. When read as a whole, Lipa has no idea that ultrasonic electrical stimulation can provide a percept. Lipa never once discusses the possibility that ultrasonic sound directly applied to the cochlea results in perception, including allowing a wearer to hear frequencies higher than air-conducted sonic human ear sensitivity (as recited in new claim 14), i.e., higher than 20KHz. Lipa very precisely teaches away from the very thing recited in the present application. The treasure was in the next room; Lipa never walked over and opened the door.

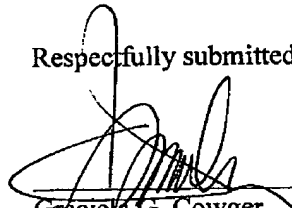
New claim 13 recites *at least one reference electrode for providing a reference voltage to the at least one electrode*. Lipa makes no such disclosure.

Conclusion

The Applicants request allowance of all claims as amended. The Applicants encourage the Examiner to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

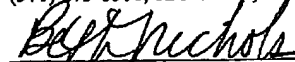
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I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office via facsimile number (571) 273-8300, on March 8, 2006.


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